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# A SHORT STORY FOR POULTRY RAISERS

ENLARGED AND ILLUSTRATED

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# A SHORT STORY

FOR

# POULTRY RAISERS

ENLARGED AND ILLUSTRATED

By Rogers Dickinson

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THE UNION LOCK


Union Fence Company

EASTERN DEPARTMENT

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## AN EXPLANATION AND A FEW SUGGESTIONS.

This little book is merely suggestive of the great subject of poultry raising, being a collection of a few facts in regard to the principal breeds of poultry raised in this country, the hatching and raising of the chicks, the proper food under different conditions and the most suitable houses and runs. No attempt has been made to give a history of the different breeds and only the popular varieties are described.

To the prospective poultry raiser, whether amateur or professional, we would suggest that good pure stock be bought and raised. Good stock costs no more to raise than mongrels, and is always more valuable, if, for any reason, it becomes necessary to sell. Moreover, from chickens whose antecedents are known, known results will be obtained, whereas no one can tell what will come from mongrels. A good fancier, or one who is interested in his poultry, is constantly trying to improve his stock, both in the quality of the birds themselves and also in their products; the quantity and quality of eggs laid, the perfection and health of the chicks hatched—all these benefits are greatly intensified if the stock is good in the first place.

The facts in this book have been taken from the writings of authorities, many of whom are quoted. We are indebted to Messrs. Doubleday, Page & Company for the use of many pictures taken from their "Poultry Book." To those who wish full and detailed information about any breed or any branch of the great subject of raising poultry, we would refer them to this book.

This little book has been compiled in the hope that the readers will find it useful and convenient. We shall be glad if it adds to your interest in this fascinating pursuit, for increased interest in poultry raising will be of direct benefit to us.

THE UNION FENCE COMPANY.

1907

## IS POULTRY RAISING PROFITABLE?

It is natural that the first question that comes into the mind of one who is thinking of raising poultry is "does it pay?"

The following experiences, drawn from first hand accounts in an unprejudiced periodical of general circulation, answer this question in the affirmative. There is no doubt that it was worth while for the people whose experiences are described to raise poultry.

The first experience is that of a boy, who made enough out of poultry keeping, having very little to start with, to support himself through his school years and at the end of that period to leave a business sufficient to support his mother and sister comfortably. The boy's total capital was eight dollars, with it he built his plant, bought his stock, consisting of ten mongrel hens, and paid for the first lot of food. Of course, rigid economy was necessary, and no account was taken of the time spent. At the end of the first year this ten-year-old boy, with the aid of a still younger brother, whose services were paid for, had built and paid for a good poultry plant, consisting of houses, yards and equipment, and had a working stock of seventy-two laying hens, ten ducks and eighteen rabbits. In addition to this he had a cash capital in hand of $33.30. During the year he had supplied his family with eggs, fowls and ducks for eating purposes, for which he was paid nothing. These are certainly good returns on an investment of eight dollars. At the end of the following year there were $130.00 in the bank and an enlarged and improved equipment.

The details of this remarkable success, with itemized account of expenditures and income, can be found in the June, 1904, number of *Country Life in America.*

Another experience that came to the writer's notice recently was equally successful, though built on a much larger scale.

A Scotchman came to this country and settled down in Connecticut. He was thrifty, wise and most industrious. When he arrived he did not have the proverbial dollar in his pocket. After saving a little he started in the poultry business, raising chickens both for poultry and egg purposes; his market was readily found in a near by

manufacturing city. This energetic man married, raised a family, bought a farm and stocked it, not only with poultry, but with cows, horses and a full farm equipment. He died recently, leaving an estate valued at $40,000. All this was made out of poultry.

Still another experience shows what can be done with poultry as a side line. The writer of an article in *Country Life in America,* who is a railroad man, tells how he got fresh eggs all winter. His original stock amounted to thirteen hens, one rooster and nineteen chicks, all mongrels. It is probable that his success would have been even greater if his stock had been pure, though his investment would have been somewhat more. The product of his plant he used for his own family table, but each dozen eggs used or each fowl killed was credited at the prevailing market price. The following tables show the results and the remarkable egg record:

BALANCE-SHEET FOR SIX MONTHS

| MONTH | COST OF FOOD | RETURN |
|---|---|---|
| Half of July | $1.47 | 79 eggs $1.58 |
| August | 1.25 | 194 eggs 4.17 |
| September | 1.80 | 185 eggs 4.43 |
| October | 2.95 | 146 eggs 3.71 |
| | 11 lbs. chicken at 22c. | 2.42 |
| November | 2.74 | 143 eggs 4.34 |
| | 9 lbs. chicken at 22c. | 1.98 |
| December | 3.45 | 104 eggs 3.47 |
| | 5¼ lbs. chicken at 20c. | 1.05 |
| Half of January | 1.40 | 63 eggs 1.58 |
| | 9 lbs. chicken at 22c. | 1.98 |
| | $15.06 | $30.71 |
| Less cost of food | | 15.06 |
| Net profit for six months | | $15.65 |
| Which pays original cost of poultry | | 13.00 |
| Leaving us a cash profit of | | $2.65 |
| Besides stock on hand, 21 chickens at $1 | | 21.00 |
| So that our total profit is | | $23.65 |

EGG RECORD

*Smallest Harvest*

December 2, 10, and 12—one egg only

*Best Days*

| | |
|---|---|
| July 26, 27 | 10 eggs |
| August 2, 3, 4 | 10 " |
| August 5, 6, 12, 14 | 9 " |
| September 1, 4, 9, 19, 20, 22 | 7 " |
| October 2, 3, 8, 9, 20, 27 | 7 " |
| November 3, 6, 18 | 7 " |
| November 9, 11, | 8 " |
| December 4, 23, 26, 28 | 4 " |
| December 25, 27, 31 | 5 " |
| December 29 | 6 " |
| January 1, 6, 7, 11, 12, 15 | 5 " |
| January 9 | 9 " |

THE RECORD OF A CRITICAL MONTH, DECEMBER

| EXPENSES | | RECEIPTS | |
|---|---|---|---|
| Grain, 2 bu. | $2.00 | 10½ lbs. chicken at 20c. | $1.05 |
| Beef scrap, 6lbs. | .20 | 88 eggs at about 4c. | 3.47 |
| Cornmeal, 40 lbs. | .80 | | |
| | $3.20 | | $4.52 |
| | | | 3.20 |
| Profit for the month | | | $1.32 |

Daily egg record: 2, 1, 2, 4, 2, 2, 2, 3, 2, 1, 3, 2, 1, 3, 2, 2, 2, 3, 3, 2, 2, 3, 4, 3, 5, 4, 5, 4, 6, 3, 5 Total, 88.

Such successful undertakings as those described could be duplicated endlessly.

*From "The Poultry Book"*

BARRED PLYMOUTH ROCKS

## THE POPULAR BREEDS IN AMERICA AND THEIR CHARACTERISTICS.

### The Plymouth Rocks.

The Plymouth Rock is perhaps the most popular breed in this country. It is a strictly American production, the progenitors having been bred from crosses of various fowls on this side of the Atlantic.

The Plymouth Rocks are valued as general utility birds, being good layers of large eggs, rapid growers and having strong constitutions. This breed will thrive wherever domestic fowls can live, and may be depended upon to attend to its work under conditions that would discourage many other varieties.

The original Plymouth Rock fowl was what is now called "barred" variety—gray birds, with dark blue, almost black, bars or stripes running across. This breed now includes white and buff varieties. A good "Rock," however, no matter what the color, must have the characteristic shape and points, which are as follows:

Broad back of medium length and rising with a slight concave to the tail, broad at the shoulders; broad breast, also, with well-rounded curve (carrying ample breast meat); strong, full abdomen, allowing ample egg room; medium head, rather rounded when

viewed from the side; eyes bright bay in color; beak short, stout and curved, clear yellow in color; shanks should be yellow, well-formed and free from feathers. The skin should also be a creamy yellow. The comb of the Plymouth Rock is single, standing up like the serrated edge of a saw; the color is of a very rich crimson. The comb will serve as an identification mark to distinguish the white variety from white Wyandottes, which they resemble in many particulars.

The standard weight of full-grown Plymouth Rock cocks is nine and one-half pounds; cockerels, eight and one-half pounds; hens, seven and one-half pounds; pullets, six and one-half pounds.

Buff Plymouth Rocks have the same characteristics as the original barred variety, the only difference being the color.

The white variety differs from the others only in color; the very best birds should be chalky white.

To sum up, the Plymouth Rock is well established; it has been tried and has not been found wanting.

## The Wyandottes.

The Wyandottes are almost if not quite as popular as the Plymouth Rocks; they originated in America, and are named after the Wyandotte Indians.

They are all-around general purpose fowls, being adapted to stand the climate of almost any part of this country; not subject to disease, being naturally healthy and vigorous, fast growers and reliable egg layers, and not averse to the duties of hatching, they combine many virtues. In addition, these excellent fowls grow to a good size, a fact which renders them great favorites with market men. The bones are comparatively small, so that there is little waste. In weight the Wyandottes are slightly smaller than the Plymouth Rocks, the cocks weighing eight and a half pounds when full grown and the hens six and a half; cockerels seven and a half; pullets five and a half.

Some fanciers are attracted to Wyandottes because there are numerous varieties—so many, in fact, that almost any taste for coloring can be satisfied; in shape, however, all varieties should be alike. The typical shape Mr. T. E. Orr in "The Poultry Book" aptly de-

scribes as following the line of a double reversed curve, that is, from the tip of the beak over the rounded head, down the full slope of the neck, along the concave of the back, then up and over the rounded tail, there is not a break in the curves. The same may be said of the underbody, as viewed in profile. From every point of view the Wyandotte is round. A characteristic of these birds is "a low set keel," the body coming close to the ground, the legs being short and stout, the breast carried low. The comb is set close to the head, is of medium size, has many points terminating in "a downward curving spike."

*From "The Poultry Book."*

SILVER LACED WYANDOTTE PULLETS

The white variety is the most popular.

There are seven varieties of Wyandottes that are commonly raised, and are as follows:

SILVER.—The original of the breed is of silver color as far as hackle and saddle feathers are concerned, each feather having a strip of black down its center, breast and thighs black in appearance, wings black and white, each being in the main white with a border of black, tail black.

GOLDEN is the same as silver, except that the general effect is golden rather than silver; what is white on the Silver Wyandotte is golden bay on the golden variety.

WHITE is the most popular variety, pure white, with yellowish white legs.

BLACK should be the all pervasive color of this variety; the shanks, too, should be dark.

BUFF Wyandottes are of dark orange buff throughout, yellow shanks.

PARTRIDGE.—The distinguishing feature of this variety is the marking of its feathers, each one of the main body feathers having a line of black along its edge and two others inside on golden brown ground; the base of the feather is gray.

SILVER PENCILED, Male.—Head and neck silvery white, each hackle feather having a black center stripe, wings black and white, breast black, shanks yellow; in the female the general tone is silvery gray, the feathers being clearly marked with concentric lines of black on white, tail black.

The Wyandottes rank with the Plymouth Rocks as a general utility fowl; both are popular. The raising of both has been found profitable in many parts of the country.

## THE LEGHORNS.

The Leghorn, imported from Italy about 1834, is one of the most important and well proven breeds that we have.

From some points of view it is a very profitable fowl, either for the farmer or the poultryman. In the first place, the Leghorns can be kept for very little, requiring about half as much food as large varieties, like the Plymouth Rock, and picking up a large portion of their living if allowed a free run.

Their reputation has been gained through their laying ability, one admirer remarking: "A Leghorn is so profitable a layer that you can afford to throw away the body."

But though small, this breed is a good table fowl if properly fed and put in condition for the table. The cocks weigh from six and a half to eight pounds, hens five to six and a half, breeders working in many cases to increase the flesh of the fowls. The lighter birds are apt to be more active and better egg layers. While being less hardy than some other breeds, their active habit helps to keep them warm and in good condition in winter.

There are numerous varieties of Leghorn, the white being, un-

SINGLE COMB BROWN LEGHORN HEN

*From "The Poultry Book."*

doubtedly, the most popular. The characteristic cock, of whatever color, is "trim," active and graceful, with a plump body, broad at the shoulders and tapering toward the tail. The plumage should be hard and close fitting, the tail well balanced, carried well up, but not upright. A full breast carried forward, a rather long neck, arched, and an erect head are essential features. The head is short and deep, with yellow beak, full bright red eyes and red face. The hen is not so graceful as the cock, but light and sprightly.

There are now many varieties of Leghorn, which are as follows:

WHITE.—Single comb and rose comb. Pure white plumage,

yellow shanks. Probably the best known and most popular of the Leghorns.

BROWN.—Single comb and rose comb. Male has bright red wing bows, front edge black and covered by breast feathers. Primaries and secondaries black, edge of lower web a rich brown. Coverts of greenish black, forming bar across the wing when folded. Tail black. Hackle rich, brilliant red, with a stripe down the center of each feather. The female is a soft, beautiful brown, with a salmon colored breast.

BUFF.—Single and rose comb. In color like the Cochin, which was used in producing this variety.

BLACK.—Single comb. Solid black, with greenish sheen, bright red wattles, white ear lobes, yellow legs.

SILVER DUCKWING.—Silvery white, narrow black stripe running along the center of the lower hackle feathers. Neck of the female light salmon color.

PILE LEGHORNS.—Pure white breast and tail, rich dark red on back and wing, pure orange neck hackle, and solid light red wing-bay. Hen, white, with slight lacing of gold on neck hackle, brown red breast.

DOMINIQUE.—Not highly thought of and very little bred.

The rose comb chickens differ very little from their single comb relations. They are supposed to be able to endure severe cold better than the birds with the large single comb, which is apt to be easily frozen.

## THE ORPINGTONS.

The history of the Orpington breed is most interesting, and deserving of a word. Mr. William Cook, of Orpington, Kent, England, desired to produce a general purpose fowl, combining laying and table qualities with hardiness. He bred individuals of the barred Plymouth Rock, Black Minorca and Black Langshans.

The result, after years of experimenting, was the Black Orpington, still the most prominent of the Orpington family. The breed has existed for eighteen years, and has steadily grown in popularity.

It is considered one of the best general purpose fowls, and will soon rank with Plymouth Rocks and Wyandottes in popularity. Their admirers claim that these birds equal the Leghorns as layers, producing large, tinted eggs, and being especially prolific in the fall and winter months. They mature a month earlier than either of the parent breeds, and are excellent table fowl, the hen weighing

*From "The Poultry Book."*

BUFF ORPINGTONS

eight to nine and a half pounds and the cock from ten to twelve pounds. Seven hundred and fifty dollars was paid for a Black Orpington cock two years ago. The characteristic Orpington form is as follows: Head, small and erect; nicely curved neck, with full hackle; broad, deep breast, carried forward; long, straight breast bone; short back, with broad shoulders. General carriage, cobby and compact, erect and graceful. Cock has medium size tail, flowing and inclined backward.

Since the production of the blacks, Mr. Cook has presented to

the public four other varieties—white, buff, jubilee and spangled. "Although produced from different combinations of blood, yet each bears the same general characteristics of type, symmetry and size, and laying and table qualities."

THE BLACK Orpingtons have a beautiful beetle green gloss on their black plumage. Their faces and combs are rich red, eyes very dark. The eggs are brown shelled. The flesh of the bird is light colored and firm, the plumage close, the skin thin and fine in texture.

THE BUFFS have clear buff plumage; pinkish white or flesh colored legs; bay eyes; bright red face, comb, ear lobes and wattles; clear legs, light flesh, and lay brown shelled eggs of good size and shape.

WHITE Orpingtons, pure white with white beak and legs, red face and ear lobes.

DIAMOND JUBILEE Orpington.—Rich, reddish brown, black and white, hackles reddish brown, center of feathers black, tips white, saddle hackles the same, outside wing bars showing a great deal of white, tail white with a little black mixture. Dark breast and underbody, feather tipped with white. White legs, red face, white beak, a single comb well serrated.

SPANGLED Orpington.—Remarkable layers, are black and white, rather uncommon.

The Orpingtons are bred with single combs or rose combs.

## THE COCHINS, OR SHANGHAI.

The Cochin, formerly known as the Shanghai, has always been a favorite with fanciers and public alike since its first introduction from China, where this race of fowls has for centuries been cultivated to a high point.

In its early days in England, the bird was heralded as a marvelous egg producer, but latterly has been bred toward beauty rather than utility.

The present Cochin is essentially a bird of feather—good to have about the home grounds—being extremely handsome and ele-

gant, placid in disposition and not inclined to cause damage by scratching about.

Naturally, however, when so much vitality is expended in producing the wonderful feathering of the Cochin, some power of egg production is lost, and the breed is only moderately useful in that respect.

The English and American types differ widely in appearance, the English bird having long legs, long, stiff vulture hocks, and flat, high-carried breast, while the American type has short legs, full, round breast and forward carriage.

The popular color is, of course, the rich golden buff or orange tone, which, however, often shows by variation of color the evil effects of early breeding.

The pure white and glossy black varieties have never been so well liked as the buff, although they are very beautiful, as is also the partridge variety, a rich mahogany red, penciled with black.

*From "The Poultry Book."*
WHITE COCHIN COCK

All Cochins, of whatever color, should be profuse of plumage, round of form, massive and vigorous, with an attractive dignity of pose.

The natural tendency is to lean somewhat forward, giving a low breast carriage. The head, broad and full over the eyes, is carried

*From "The Poultry Book."*

RHODE ISLAND RED HENS

A true American breed, of excellent all-around quality. Quick growers, good layers, and good constitution.

on a gracefully arched neck into broad shoulders. The eyes are bright bay, the comb smooth and free from unevenness, with full pendant wattles, and ear lobes that hang almost even in length. A full underneath fluff builds out the plumage, even the strong legs being covered with soft, fluffy feathers, coming down over the feet. The hen conforms largely to the shape of the male, the most perfect hen being so round and feathered as to be almost a ball of down.

DARK BRAHMAS

*From "The Poultry Book."*

One of the old time reliable breeds. Noted for their large size. They are indifferent layers. The Brahmas were the foundation of a number of famous utility breeds.

# FOOD AND FEEDING OF POULTRY.

This is one of the most important subjects in connection with the raising of poultry. While no hard and fast rules can be laid down, there is no doubt that certain foods, if properly administered, produce certain results. The principles here given have been found through careful experiment to have an effect on the product.

In general the principle in feeding poultry is to supply that which is consumed fastest, just as the farmer puts back into his land that which his crops take out, and the more thorough this refurnishing of nature's larder, the better the results. As the crops do not draw any one substance from the soil, so the growth of a hen or her egg production does not consume any one compound, but more or less proportions of water, ash, protein and fat. The food, therefore, must be a combination which provides these substances in such a way that the supply and demand shall be approximately equal.

The following are the foods that are most generally used, and the special value of each. No one food should be given, but rather a well balanced combination of a variety of different grains, vegetables, etc., as will be shown.

## Grain Foods.

Fowls are so constituted that grain foods are particularly suitable for them, the digestive apparatus of a chicken being especially adapted for the grinding and assimilating of cereals, the flavor also being to their liking. A mixture of vegetable and animal food with that of grains is necessary to produce the best effects.

Wheat.—It is said that there is no better food for poultry than wheat, the size of the grain, color, shape and the freedom of an unyielding covering make it very desirable. It is rich in protein and starch, and is, therefore, fattening, but not to such an extent as corn.

It is not so valuable, therefore, for fattening as to promote growth. Wheat is expensive, but certain grains not good enough to use for making flour are quite as good for feeding to poultry.

CORN is the grain that is most relished by poultry, and generally forms the basis of their food. Its shape, texture, color and size make it attractive for fowls and easy to swallow and digest. It contains a great deal of oil and sugar, which adds flavor and renders digestion easy. It is very fattening, however, and if fed exclusively or in too large proportions discourages egg laying. For egg laying it should be combined with foods more rich in protein and ash.

OATS makes good food for poultry, provided it is high grade. It is rich in protein and carbohydrates, giving the heating quality. It is an expensive food, but desirable as a small part of the daily ration. Some authorities consider it a stimulating ration, but all do not agree on this point.

BARLEY is good for poultry food, if it can be obtained sufficiently pure. It stands between oats and peas as a growing food, and is next to corn as a fattening food.

BUCKWHEAT is rather hard to get, on account of the demand for it for culinary purposes. Other less expensive foods do quite as well.

RYE is not a success for poultry food for no other apparent reason than the dislike the fowls have for it.

WHEAT BRAN is especially useful to add bulk to the ration.

MIDDLINGS is practical on account of the gluten it contains, a kind of sticky quality that makes the ration palatable, and is also valuable in egg production.

LINSEED MEAL is considered a healthful ingredient during the moulting period, but should be used sparingly on account of its laxative property. Generally it will not be necessary or wise to feed more than one-fifteenth part of the daily ration.

## MEAT FOODS.

Mr Rice, in his chapter on "The Feeding of Poultry," in the Poultry Book, says: "Hens are meat eaters. They are natural scavengers, worm and insect hunters. It has long been commonly believed that chickens should grow faster and with greater profit

when fed meat in some form." He says further: "I believe that meat in some form is the most important single article of food that can be fed to stimulate the ovaries into activity and increase the secretions of albumen.

It must be fed with care, therefore, to young pullets, lest they be stimulated to premature egg laying. It is the protein in meat that is particularly valuable. The fat and lime in meat and bones are useful; one for fattening purposes, and the other in bone-building and for the shells of eggs. Both these substances can be bought in cheaper form. Tainted or musty meat foods should not be used. A little boiling water poured over suspected food of this character will soon determine its quality.

### Vegetable Foods.

Fowls, besides being grain and meat eaters, are also fond of vegetables, and are benefited by the addition of green food to their diet. Whenever possible the poultry runs should be so arranged that the fowls will feed themselves from the natural growths. Poultry, like cattle, need good pasturage, and the cost of their keep can be reduced to the minimum if suitable grazing ground is provided them. It often pays to sow a small quantity of oats and peas and a more liberal amount of red clover for the benefit of the chickens.

In winter green food is important, both raw and cooked. The mangel beet is considered particularly good for feeding raw, and turnips when boiled, the fowls being fond of both. Cabbage, in not too large quantities, may be supplied to advantage.

### Grit and Mineral.

Grit takes the place of teeth in a chicken's internal economy, and is therefore one of its necessities. In the fowl's gizzard the particles of oyster shells serve to grind the grains into the pulpy mass which is digested by the intestines. The mineral matter is necessary in the forming of the egg shells, and those hard particles from

which the lime is most readily dissolved are therefore the most useful. The amount of mineral matter fed to poultry depends largely on whether they are laying or not. During the laying season hens require more mineral matter than when they are not producing eggs.

### Medicinal Foods.

The following substances are used for their medicinal effects or to add palatability to food: Salt is always good, but especially valuable when an egg-forming ration is being fed. Mr. Rice says that is safe to feed one-half pound to a hundred pounds of food. Charcoal is useful as an absorbing agent and, therefore, an aid to digestion; fowls may be allowed to help themselves to charcoal—they are good judges as to how much they need. Red pepper is warming and a stimulant, and is used to force egg production; it should, however, be used with care.

It goes without saying that chickens need plenty of pure water. Many owners of poultry are at a loss to account for the sickness of their feathered charges who would have no trouble if the condition of their drinking water was looked into.

The following is quoted from Mr. Rice's chapter on feeding in the Poultry Book, and gives the gist of his experience with cooked food:

"Our plan is to boil a kettleful of mixed vegetables and bones from the butcher's, with the kettle closely covered. When thoroughly cooked, this is put into a mixing-tub and thoroughly mashed. Then ground grain is added until the mixture becomes dry and crumbly, when it is fed immediately. Experience will very quickly indicate the proportion of vegetables and grain, and also how much of the mixture will be needed for a feeding. No rule can be given, so much depends upon the nature of the grain mixture and the kind of vegetables used, and upon the appetites of the fowls."

### The How and When of Feeding.

This is a question that hardly two authorities agree upon—but the "how" is more important than the "when." As a general thing, however, frequent feeding and a little at a time is a good rule,

because the appetite is kept on edge and necessary exercise is obtained through the foraging and scratching that results.

As a rule the first meal of the day (a light one) should be of fine grain, because the digestive organs are empty and in good condition for work.

At noon it is generally safe to give them all they can consume entire in fifteen or twenty minutes. In this time soft food will not become too cold in winter or sour in summer.

At night poultry should be fed all the grain they can eat, giving their digestive apparatus something to do during the night.

### Feeding for Special Purposes.

The following are a few suggestions for the food to be given poultry to produce special results. No definite rules can be laid down; the poultryman must be guided largely by experience.

Feeding Pullets.—The chief object in feeding pullets is to make them grow rapidly, solidly and normally, yet to avoid stimulating them to premature laying.

Meat should be fed sparingly, and concentrated ground feed but once daily. "Plenty of range—a good mixture of whole grain, like wheat, oats, barley, peas and corn." Very fattening food, like buckwheat and corn, should be fed sparingly. Pullets should be fed three times a day.

The proper food for breeding stock is that which keeps up their vitality rather than that which is stimulating. Hens that are forced to lay cannot be depended upon to produce eggs having sufficient of the life element to insure healthy chicks. A diet consisting largely of whole grain, with just enough meat to give variety, and plenty of vegetables, is considered the most suitable. The sitting hen should not be fed a stimulating ration, but just enough to keep her in condition during what may be called the sedentary periods of her life. Whole grain in good variety is best.

Broody Hens.—This condition is sometimes caused by reason of nervous exhaustion due to continuous egg-laying, and may be broken up by upbuilding diet. Broody hens are sometimes over fat, in which case they should be fed on easily digested food rich in

protein and mineral matter. If lean, more fattening food should be added—corn in greater proportion.

Moulting Hens.—During this most critical condition special care is necessary. The fowls that moult most thoroughly and easily and recover most rapidly are those which are neither too fat nor too lean. Care should be taken, therefore, to keep them in condition that approximates the happy medium as nearly as possible.

Feeding Chicks.—These little creatures should be fed early and often, but over-feeding should be carefully avoided. The first food should be given them about twenty-four hours after hatching.

First day or two wheat bread soaked in skimmed milk, squeezed dry and crumbled; next few days add to this fine cracked wheat and oatmeal. The grain should be dropped in a litter of chaff, so the chicks will have to scratch for it. After four weeks, soft food made up of corn meal, mixed with sour milk and soda to make it light, i. e., johnny-cake, can be fed quite liberally. The same principles that apply to grown poultry apply to chicks also.

The following table is given to show the comparative composition of different grain foods:

GRAIN FOODS ARRANGED IN ORDER OF TOTAL DIGESTIBLE PROTEIN CONTENT IN ONE HUNDRED POUNDS.

| | Dry Matter. | Ash, or Mineral Matter. | Protein or Muscle-Maker. | Total Carbo-hydrates Fat-Formers. | Nutritive Ratio. Prot.-Carb. | Manurial Value in 100 Pounds. |
|---|---|---|---|---|---|---|
| Flaxseed | 90.8 | 4.3 | 20.6 | 82.3 | 1:4 | .657 |
| Peas | 90 | 2.6 | 16.8 | 53.4 | 1:3.2 | .548 |
| Sunflower Seed | 92.5 | 2.6 | 12.1 | 85.8 | 1:7.1 | .428 |
| Wheat | 90 | 1.80 | 10.2 | 73 | 1:7.2 | .426 |
| Rye | 88 | 1.9 | 9.9 | 70 | 1:7.1 | .329 |
| Wheat Screenings | 88.4 | 2.9 | 9 8 | 55.9 | 1:5 6 | .462 |
| Oats | 89 | 3 | 9.2 | 56.8 | 1:6.2 | .378 |
| Millet | 86 | 3.3 | 8.9 | 52.2 | 1:5.2 | .365 |
| Barley | 89 | 2.4 | 8.7 | 69.2 | 1:7.9 | .288 |
| Corn | 89 | 1.5 | 7.9 | 76.4 | 1:9.7 | .326 |
| Buckwheat | 87 | 2 | 7.7 | 53.3 | 1:6.9 | .247 |
| Kaffir Corn | 84.8 | 1.5 | 7.8 | 63.2 | 1:8.1 | .... |
| Broom Corn | 85.9 | 3.4 | 7.4 | 54.8 | 1:7.4 | .2245 |
| Sorghum Seed | 87.2 | 2.1 | 7 | 59.1 | 1:8.4 | .2814 |
| Rice | 87.6 | .4 | 4.8 | 72.9 | 1:15.2 | .1750 |

## HATCHING AND RAISING CHICKS.

It is a wise plan to follow the suggestion that the hen herself gives when hiding her nest. She always selects a sheltered spot, which will not be exposed to changes of the weather. In preparing a nest for the broody hen it should be so constructed as to protect the eggs from the under side. It should be deep enough to provide protection from below, and wide enough to prevent chills from the sides upon the eggs.

If a hen is troublesome it is a good plan to confine her upon the nest with a few worthless eggs before giving her the good eggs to incubate. It is best to have fresh-laid eggs and, as nearly as possible, all of one size and all of one breed. An odd number of eggs "round up" better in the nest than an even number, no hen being given more eggs than she can easily cover. If three or four hens are set on the same day, two can be assigned the duties of mothers for the four families, while the other two can be returned to the nest for incubating.

Each hen must come off her nest once every day, and then return. The floor should be covered deeply with fine earth or sand to serve as a wallow, and great care should be observed in freeing the hen from all vermin. Dalmatian powder, rubbed well into the feathers when the hen goes on the nest, and again when she has been sitting for two weeks, will usually protect her.

The time for hatching varies much with the climate, and the purpose for which the chickens are raised. For winter-laying pullets, April-hatched chickens are best. It is a fact worthy of note that the young chick grows best when the grass is beginning to sprout and can be used for food. May-hatched chicks do as well often as those hatched earlier if they are carefully fed, but those hatched later than May seldom make good winter layers, late-hatched chicks being good for market poultry. For exhibition purposes, the fowls should be hatched early enough to reach full size and plumage before being shown.

In about twelve hours from the time the hen begins to sit life

is perceptible in the eggs, the chick escaping usually on the twenty-first day, though sometimes the young bird comes out as early as the eighteenth day, and occasionally as late as the twenty-seventh.

Reamur, in observing chicks breaking out from the shell, says: "I have seen chicks continue at work for two days to break the shell. Some, in consequence of their impatience to see the light, begin to break the shell a great deal too soon, for they ought, before their exit, to have within them provision enough to last twenty-four hours before taking food, and for this purpose the yolk is consumed. The chick, indeed, which comes out of the shell before taking up all of the yolk, is certain to droop and die."

After twenty-four hours the hen, with the chicks, should be placed in a warm, dry coop that will provide housing for all.

The artificial incubating and brooding of chicks has come into wide use, and has many points of value. The danger of pests is obviated when the artificial mother raises the young, and the chicks of non-sitting varieties may be raised artificially, saving the introduction of other fowls; also the hatching season need not be delayed for the lack of broody hens when a good incubator and brooder may be bought.

The incubator should be placed where there will be a regular temperature not below twenty degrees nor higher than seventy degrees, Fahrenheit, a moist atmosphere without being better than dry air. Within the machine the temperature ranges from 102 to 104 degrees.

The eggs should be aired and turned daily, and the clear, or non-fertile eggs removed after the fifth or seventh day.

When the chicks go from the hatcher to the brooder, the temperature in the brooder should be about ninety, the outer room of the brooder where the chickens eat and run at about seventy, being gradually lowered. Too much heat and dampness and dirt are destructive agencies in the life of young chicks.

Clean, dry quarters are essential to the growth of the young birds. They must have a dry footing at all times, and not too much coddling. Clear cold weather is not so bad as the chilly, or damp weather.

# POULTRY HOUSES.

In this chapter the simpler and less expensive structures are described, but the more extensive houses are but the grouping of several smaller compartments under one roof, the same principles applying to both large and small.

The living quarters of poultry should be located on dry, well drained ground having a southern exposure if possible, the most advantageous position being on a hillside facing the south. Trees are desirable also, since they afford shade and a wind-break. Some of the more delicately colored fowls require shady runs, otherwise the color is likely to fade. A hillside is better for poultry houses than a valley, because the cold, damp air is apt to settle in the hollows.

Besides the comfort of the fowls the owner's convenience should be considered, the houses and runs being so planned that all unnecessary steps will be saved. Expense can, of course, be reduced by careful planning; three yards, for instance, if run side by side, require but five lines of fence which, if separated, would need nine distinct divisions, it being understood that the houses form the fourth boundary.

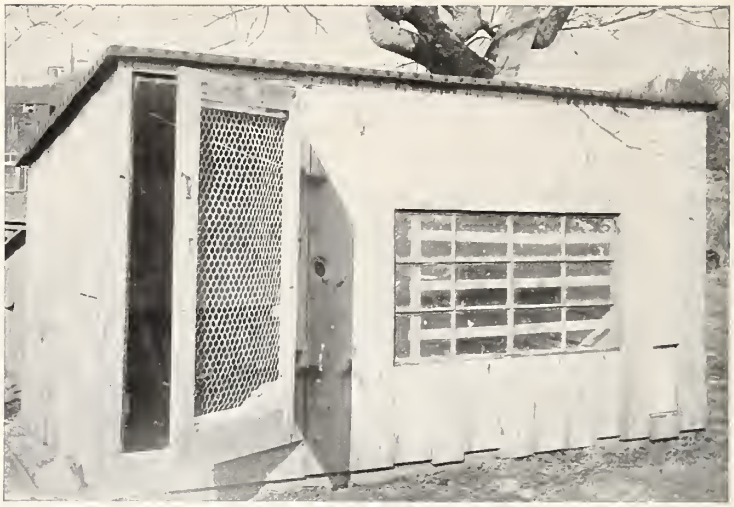
Small yards, long and narrow, are considered the best, since small flocks are found to produce the most eggs, and the long, narrow enclosures are the most convenient shape for cleaning or cultivating if a foraging crop is grown. It is a good plan, when space permits, to have runs extending on both sides of the poultry house, i. e., back and front, as this arrangement allows of the flocks being changed whenever necessary to clean or cultivate.

It is advisable to keep fowls confined within the limits of a yard, because their energies, which would otherwise be spent in ranging, are used in egg production. Sufficient exercise to keep the fowls in a healthy condition is all that is necessary.

The same principles that apply to the building of houses for persons are equally applicable to those for poultry. Sunlight, air and warmth are necessary for hens as for humans, and in addition care should be taken that poultry houses are so built that they can be

easily cleaned and made sanitary.

As a basis for figuring, it is a safe estimate that from five to six feet of floor space and eight or ten cubic feet of air space are required for each bird; the size of the house can be easily worked out from this formula.



*From "The Poultry Book."*

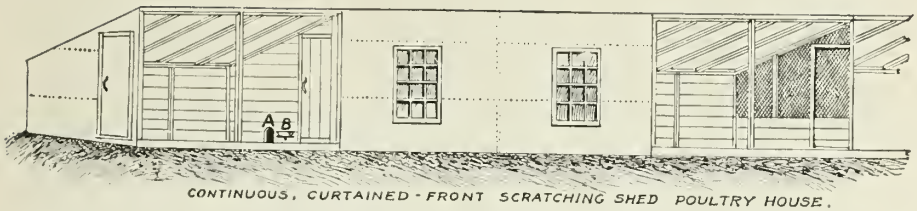
A PRACTICAL POULTRY HOUSE

This is the house described below, note the double door.

## How to Build a Poultry House.

While no one type of building for housing fowls would meet all conditions, the structure described has been found very useful, and the reader can easily make any changes to suit his special requirements. Arthur A. Duston described in detail in The Poultry Book the house that he has used for several years and found satisfactory in every way.

This house is ten feet long by five feet wide, and is five feet three inches high in front and is four feet two inches high at the back. A large window, the lower edge of which is but a foot from the ground, extends across the front or tall side, being about four feet long by two side, and hinged at the top. This window admits plenty of sunshine and when open turns the house practically into an open shed. To the left is hung a door two and one-half feet by four and one-half, which is really a frame covered with wire netting; inside the frame another, solid, door is tightly fitted, which

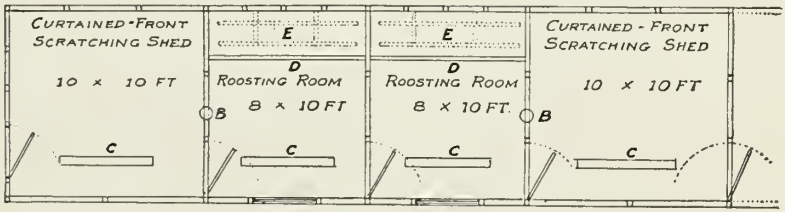



CONTINUOUS, CURTAINED-FRONT SCRATCHING SHED POULTRY HOUSE.

*From "The Poultry Book."*

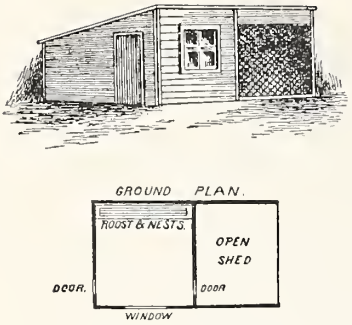
This is a good house to build if it is desired to keep the fowls under a roof. Useful when 200 or more birds are kept. Plan shown below.

may be opened at will. It is obvious that the wire door will let in air and light and prevent the chickens from coming out. When the solid inside door is closed, however, the interior can be kept warm. The house is built of 2x3 studding and seven-eighth inch tongue and grooved planks. The house is built like a packing-box except that the corners and roof supports are reinforced with the 2x3 timbers. The roof should be covered with any good roofing material, and should extend over the side walls three or four inches to prevent the rain from driving in. Mr. Duston's houses were floorless, the bottom frame-work being of 2x4 stuff and very strong, so that he could put the whole house on wheels and move it from place to place. If desired, however, the posts forming the corners could be made two feet longer and sunk in the ground and the structure built on them. If this latter method is followed it is well to nail the lower course of side planking below the surface of the ground, digging a shallow trench for the purpose and filling in afterward; this prevents under drafts. The house should stand on the bare ground, and preferably on ground that is dry and friable.

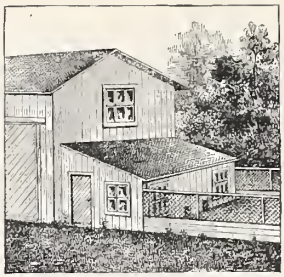



GROUND PLAN OF PENS AND SHEDS

*From "The Poultry Book"*




A colony house with scratching shed under one roof



*From "The Poultry Book."*

A useful and easily constructed lean to poultry house.

The nests, few in number (some poultrymen consider two to eight or ten hens sufficient), should be placed at the back or low side of the house and the perches, made of flat rounded strips of wood two or three inches wide, should be supported on brackets about six inches above them. A movable board completely covering the nests should be placed under the perches. This board, being movable, can be easily cleaned, and at the same time allows of easy access to the nests. If the house is to be used for raising chicks the nests and perches can be taken out and a brooder put in, or two mother hens can be confined in small coops while their combined broods roam at will in the ample space.

These houses can be used detached, each with its own run, as many poultrymen prefer, or a number can be built together side by side. In the latter case, of course, it would be more economical to leave out the side walls, substituting partitions of poultry fencing. All poultry houses should be frequently whitewashed or disinfected.

Several other forms of poultry houses are here illustrated, their distinctive features being clearly discernible.

Incubators should be kept in a house which is half cellar, because an even temperature can be maintained in such a place much more easily than in one that is exposed to drafts. If the cellar of a dwelling house is dry the incubators can be kept there; the cellar of one's house is a good place also, because it is convenient to watch and regulate the hatching machines.

Union Lock Poultry Fence. Note the absence of top rail and bottom boards and distance between posts.

## A FEW SUGGESTIONS ABOUT POULTRY FENCING.

The same fallacy that some people have had that mongrel fowls would produce satisfactory results has applied to the fencing of poultry yards.

The first poultry yards were built of laths, with wooden framework, and, while a vast improvement over any previous attempts to inclose them, the laths were easily broken when new, and soon rotted out.

The next device for this purpose was the Hexagon Mesh Poultry Netting, which revolutionized the business. The wire was lighter, neater, stronger, and more durable; it cost less to erect and was in every way a great improvement. Many manufacturers began making this netting, and the business rapidly grew to large proportions. Various defects, however, in this hexagon mesh netting soon appeared, which have not been and cannot be overcome.

The first trouble was the impossibility of making netting so that it would not sag or buckle. If it was stretched tightly enough between the posts to lie flat, the top and bottom edges drew together, lifting it from the ground and drawing it down from the top. It became necessary to set the posts very close together and to use top rail and bottom boards in order to keep the edges apart. The addi-

tion of a top rail then caused a difficulty of another sort. Hens will fly when they can see a place to light, and the top rail made a very convenient place for this purpose; so that it soon became necessary to make the fence very much higher, or to inclose the whole top as well. Both of these expedients were adopted.

ANGORA GOATS ENCLOSED WITH UNION LOCK POULTRY FENCING

The next difficulty was in the size of the mesh, which was too large to inclose small chickens; and unless the board at the bottom was high enough to keep them in, they rambled outside of the enclosure. Netting was made with a much smaller mesh, to be used at the bottom of the fence and for chicken yards, but it was much more expensive and its use has been limited on that account.

A few years ago woven wire field fencing was introduced, and in nearly all of the best styles the principle of having narrower spacing at the bottom, with wider spacing at the top, was adopted. This principle led to a natural development; the Union Lock Poultry Fence was invented, and a fence was made which combines all the good features of a field fence with spacing small enough for poultry yards. From the outset it was impossible to supply the demand. It has now been made for the past six years, with a production each year more than double the year previous.

It was first made at DeKalb, Ills., but the great increase in

A LONG STRETCH OF UNION LOCK POULTRY FENCE

At the Lakewood Poultry Farm, Lakewood, N. J. Five miles in use at this farm. They raise White Leghorns and find a five-foot fence high enough to keep them in on account of absence of top rail. The owner considers Union Lock Fence "indispensable."

demand made it necessary to establish other mills, and while the mill at DeKalb has been greatly enlarged; new machines have been built and put into operation at New Haven, Conn., and Oakland, Calif., so the manufacturers are now in position to ship the fence to any part of the country, direct from their warehouses, at any one of the three plants, or from warehouse at Kansas City, Mo.

Besides that, agencies have been established all over the country; thousands of hardware stores, poultry supply dealers, and agricultural houses are handling it and carry it in stock.

## Description.

A few words of description will show why it has become so popular, and may be of interest to those who are not yet familiar with its merits. In the wider sizes, it is no more expensive than the old style poultry netting, and the fine mesh at the bottom—small enough to keep in small chickens—will appeal to every practical raiser as a great advantage. The cables and pickets are placed at right angles, each intersection being made by the patented "Union Lock," which absolutely prevents any slipping of the wires and insures great strength, together with a proper amount of elasticity.

On account of the pickets being at right angles to the cables, the fence will fit any unevenness of the ground without

cutting, which is an advantage not possessed by any hexagon mesh netting or diagonal mesh fencing. The horizontal lines are composed of two heavily galvanized steel wires, twisted together, which make what are termed the cables. Beginning at the bottom, the first seven cables are 1¼ inches apart, the next three cables are 1½ inches apart, then six cables are 2 inches apart, and all above that 4 inches apart. This gives a mesh of 1¼ inches by 3 inches at the bottom, where the small mesh is required, and above 2 feet, where the fowls can only reach when on the wing, the mesh is 3 inches by 4 inches.

*No top rail or bottom board is required,* and a lower fence can be used successfully, for there is no place for the fowls to light, and therefore no temptation for them to fly. No covering is needed over the top, and, owing to the fact that the fence may be stretched tightly without sagging or buckling, no more posts are needed than for the ordinary woven wire field fence, or about one-half the number needed for the hexagon mesh poultry netting.

It is made in two weights, No. 19-20 and No. 17. The No. 19-20 is especially adapted for poultry yard use, while the No. 17 may be used not only for poultry yards, but equally well for barnyards, gardens, orchards, etc. It is equal in strength to the Union Lock Field and Hog Fence, and is especially adapted for a combination Stock and Poultry Fence. It will keep out dogs and keep in cattle, horses and even hogs without difficulty. The horizontal spacing of cables in both styles of fence is the same. The pickets

USED FOR A COW YARD—HENS RUN IN THE SAME ENCLOSURE

It even keeps hogs within bounds, the most severe test for any kind of fence.

are 3 inches apart in No. 19-20 and 4 inches apart in No. 17. They are made of No. 19 galvanized wire in the No. 19-20, and of No. 17 galvanized wire in the No. 17 fence.

This fence is *sold by the rod,* and not by the square foot, for it is not a netting, but is a true fence. It is the most economical, while the most effective and serviceable fencing now on the market; and it is difficult to conceive of any improvement, for the Union Lock combines all the advantages that are needed for this purpose. The economy of its use consists in the fact that fewer posts are required, no top or bottom boards are needed, and, further, in the fact that the fence need not be inclosed at the top, and need only be four or five feet high to be effective. It is made, however, in all widths from 12 inches to 84 inches, in order to meet the requirements of every condition. Put up in 10 rod and 20 rod rolls. Strong steel frame gates, covered with heavy-weight fence are supplied if desired, with hinges and latch ready for use. All standard sizes carried in stock.

### Directions for Erecting.

Set the posts about a rod apart, bracing the corner and end posts securely. In soft, sandy soil it is well to dig a shallow trench to set the bottom of the fence into, filling in the earth after the fence is in place, so as to prevent the fowls from scratching under the bottom cable. Staple the end of the roll to the end post. Unroll the entire length to the next corner. Attach the stretcher and *stretch it until it "sings."* Staple to the corner post back of the stretcher. Remove the stretcher and staple to each post between. *Don't be afraid*

*of stretching it.* The tighter it is, the stronger it is and the longer it will last. It will not buckle or sag, but will be as flat as a board in every part. Two men can put up 100 rods in one day, after the posts are set, without difficulty.

We recommend the use of a quick-acting "Brooks Stretcher," which clamps the fence by means of a cam action and which is supplied with a block and tackle for the stretching mechanism. This block and tackle is adapted to general farm use as well and is a handy device for many purposes. If it is not considered advisable to buy a stretcher and your local dealer cannot loan one, a home-made clamp can be constructed from two pieces of one-inch board four or five inches wide and as long as the fence is high, using bolts through both sides, about six inches to a foot apart, spacing them nearest together at the bottom. Use washers under the heads and nuts and bolt the fence tightly between the boards. A block and tackle can then be attached, and the fence can be stretched close up to the end post. Staple *behind* the stretcher and stretch a little tighter than you want the finished fence. After the stretcher is removed the spring of the fence will make the tension uniform throughout the entire length, and the staples can be driven into the intermediate posts at your leisure. *Don't fail to brace your corner and end posts if you want a good fence.* The Union Lock Fence, put up properly, costs less, lasts longer, looks better, is stronger, and in every way more satisfactory than any other fence or netting; but like all good things, it must be properly used. If it is hung loosely, without stretching, it will be little better than common netting. Many of our agents are provided with Brooks Stretchers, which they loan to their customers. They are not expensive, and every poultry farm should have one. One is given free to each buyer of 500 rods or more, if asked for, when order is given.

There is an agent in almost every large town in the United States and in many of the small towns as well, but if you are not able to obtain it from your dealer, the Union Fence Company, Eastern Department, 114 Liberty St., New York City, will be glad to give you the name of their nearest agent, or will supply the fence direct from the mill. Place your order early, for during the busy seasons delays in shipping are likely, in spite of every effort to avoid them.

# AN AFTERWORD.

This little book has fulfilled its mission if it has told you something new about poultry raising. We hope you will get some practical benefit from it. As we said in the beginning, it is merely suggestive. If the suggestions help you to decide that you want some of our Union Lock Poultry Fence, we know we have made another friend, for the fence is all we claim for it, and the more you buy, the more you will add to your profits in poultry raising. "A dollar saved is a dollar earned."

THE UNION FENCE COMPANY,
Eastern Department,
114-118 Liberty Street,
New York City.

Mills:

New Haven, Conn. DeKalb, Ills. Oakland, Calif.

Warehouses at Mills and at Kansas City, Mo.

We also make many styles of field, hog and lawn fence with gates, posts and fittings to match each style. Ask for particulars.

## UNION BARB AND PLAIN TWISTED WIRE,

LIGHT—STRONG—DURABLE,

Costs less per mile than old style. Put up in measured spools containing 80 rods or 160 rods each.

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